Task – 8

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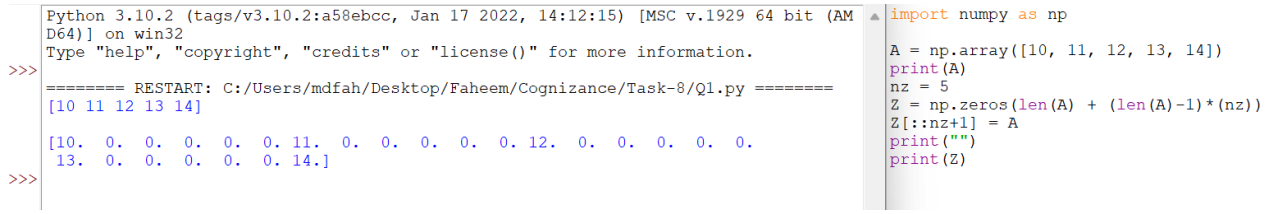
Question 1 – Output:



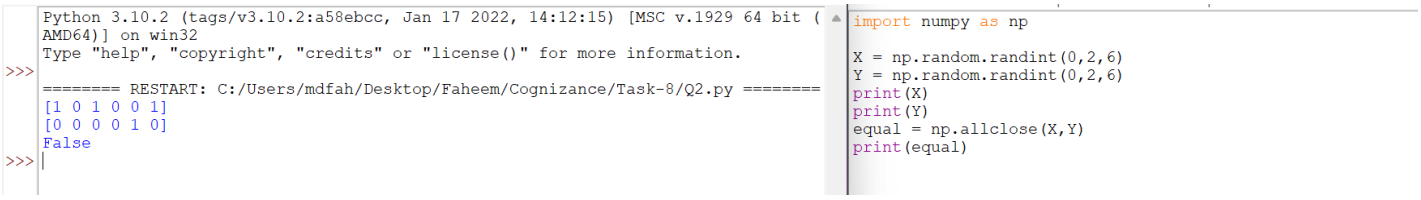
```
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:/Users/mdfah/Desktop/Faheem/Cognizance/Task-8/Q1.py ========
[10 11 12 13 14]

[10.  0.  0.  0.  0.  0. 11.  0.  0.  0.  0.  0. 12.  0.  0.  0.  0.  0.
 13.  0.  0.  0.  0.  0. 14.]
>>>
```

```
import numpy as np

A = np.array([10, 11, 12, 13, 14])
print(A)
nz = 5
Z = np.zeros(len(A) + (len(A)-1)*(nz))
Z[::nz+1] = A
print("")
print(Z)
```

Question 2 – Output:

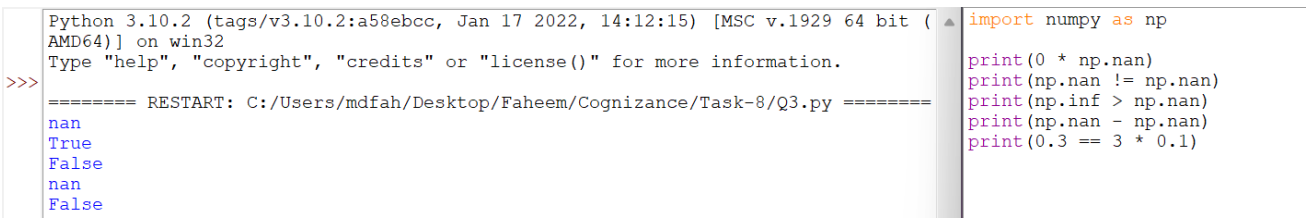


```
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:/Users/mdfah/Desktop/Faheem/Cognizance/Task-8/Q2.py ========
[1 0 1 0 0 1]
[0 0 0 0 1 0]
False
>>>
```

```
import numpy as np

X = np.random.randint(0,2,6)
Y = np.random.randint(0,2,6)
print(X)
print(Y)
equal = np.allclose(X,Y)
print(equal)
```

Question 3 – Output:



```
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:/Users/mdfah/Desktop/Faheem/Cognizance/Task-8/Q3.py ========
nan
True
False
nan
False
```

```
import numpy as np

print(0 * np.nan)
print(np.nan != np.nan)
print(np.inf > np.nan)
print(np.nan - np.nan)
print(0.3 == 3 * 0.1)
```

Question 4 – Output:

```
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929
64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information
.
>
======== RESTART: C:/Users/mdfah/Desktop/Faheem/Cognizance/Task-8/Q4.py
========
Series:

0       welcome
1            to
2    cognizance
3        python
4          task
dtype: object

Resulting Series :

Welcome To Cognizance Python Task
>
```

```
import pandas as pd
import numpy as np

series = pd.Series(['welcome', 'to', 'cognizance',
                    'python', 'task'])
print("Series:")

print("")

print(series)

CapSeries = series.str.title()

# Print the resulting series
print("\nResulting Series :")
CapSeries

print("")

X = np.array(CapSeries)
print(*X, sep= ' ')
```

Question 5 – Output:

```
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (
AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

======== RESTART: C:/Users/mdfah/Desktop/Faheem/Cognizance/Task-8/Q5.py ========
A =
 [[1 0 0]
 [1 0 2]
 [2 1 1]]
B =
 [[1 0 1 2]
 [1 0 1 0]
 [0 1 2 0]]

Matrix Multiplication =

[[1 0 1 2]
 [1 2 5 2]
 [3 1 5 4]]

Identity Matrix :

[[1. 0. 0. 0. 0.]
 [0. 1. 0. 0. 0.]
 [0. 0. 1. 0. 0.]
 [0. 0. 0. 1. 0.]
 [0. 0. 0. 0. 1.]]
```

```
import numpy as np

# Q5 (ii)

# Multiplying a matrix

A = np.random.randint(0,3,(3,3))
B = np.random.randint(0,3,(3,4))
print('A =\n',A)
print('B =\n',B)
M = np.dot(A,B)
print("")
print('Matrix Multiplication =')

print("")
print(M)
print("")

# Q5 (iii)

# Identity matrix

I = np.eye(5)
print("Identity Matrix :")
print("")
print(I)
```